

DEPARTMENT OF TRANSPORTATION**DISTRICT 1**

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June 9, 2005

Janis Cooke
Central Valley Regional Water
Quality Control Board
511020 Sun Center Drive #200
Rancho Cordova, CA 95670-6114

Dear Ms. Cooke:

RE: STAFF REPORT, AMENDMENTS TO THE WATER QUALITY CONTROL PLAN FOR THE SACRAMENTO RIVER AND SAN JOAQUIN RIVER BASINS FOR THE CONTROL OF MERCURY IN CACHE CREEK, BEAR CREEK, SULPHUR CREEK, AND HARLEY GULCH

The California Department of Transportation (Department), North Region Environmental Engineering Unit (NR-EE), has reviewed the May 2005 staff report regarding the proposed Basin Plan Amendments for the Control of Mercury in Cache Creek, Bear Creek, Sulphur Creek and Harley Gulch (BPA for Mercury). NR-EE considers the BPA for Mercury to be a very comprehensive document that will ultimately achieve the overall goal of reducing the levels of mercury within these watersheds. While much of the document focuses on the contributing factors of abandoned mines within the geographical area, NR-EE has some concerns as to the extent the BPA for Mercury, as written, will impact the design, delivery, and construction of transportation projects. This is of added concern with respect to safety projects. The comments below focus on three general areas of the BPA for Mercury: benchmark 'triggers' for mercury concentrations in soils, water and sediment monitoring requirements, and requirements for erosion and sediment control plans as appropriate for transportation projects.

1) Page 8 of the BPA for Mercury states as one of the goals to protect beneficial uses of Cache Creek and its tributaries is to "...control discharges in watersheds where the total mercury concentrations in fine-grained sediment and soil are greater than 0.4 mg/kg, dry weight". On page 42, under item 3), the benchmark trigger is defined as 0.2 mg/kg, dry weight. On page 48, 'mercury-enriched areas' are defined as "... (average concentration greater than 0.2 mg/kg, 0.5 mg/kg maximum)". Also on page 48, "... ('elevated soil mercury concentrations' defined for Cache Creek watershed as an area in which the average of analytical results for unique samples is greater than 0.5 mg/kg)". Please clarify what the benchmark 'trigger' will be which defines 'mercury-enriched' soils.

2) The BPA for Mercury makes references to 'fine-grain' soil throughout the document. Page 16 of the DBPA makes reference to fine-grain as particles < 65 microns. Page 72: "...and only the fine sediments (silt/clay fraction, suggested filter size 63 micron)...". Technically speaking, 'fine grained' soils are defined as soils that pass the #200 sieve - or are less than 0.075 mm in size

(USCS, AASHTO, ASTM, etc). The BPA for Mercury should contain a definition of fine-grain soils based on accepted industry practice.

3) Page 12 of the BPA for Mercury states: "All road construction or maintenance projects by the California Department of Transportation (Caltrans) shall comply with the Caltrans statewide storm water permit and implement the highest level of management practices to control erosion. Water quality and sediment monitoring is required to ensure compliance with this requirement". Additionally, the second sentence on page 13 states, "All new projects within the 10-year flood plain of Cache Creek between Rumsey and the Cache Creek Settling Basin are prohibited from causing a net increase in erosion of mercury-enriched sediment." Also, on page 49, the last paragraph states in part, "The proposed Basin Plan amendment requires all projects that create a disturbance within the active channel (10-year flood plain) submit erosion studies and mercury and methylmercury remediation plans." As written this would require some level of 'photodocumentation, surveying, or turbidity monitoring' for basic projects such as replacement of road signs, extension of metal-beam guard rail, open-graded asphalt concrete over-lay, etc., both "...during and after..." project construction. These types of projects result in very little, if any, disturbed soil area but are considered 'new projects' by the Department. These three sentences, and others, should include some qualifier for 'project' such as, "All new projects that result in a disturbed soil area of _____". NR-EE recommends a qualifier of 0.1 hectares (0.25-acres). Note that projects of less than 1-acre are not required to submit a Notice of Construction as required by the Statewide Construction General Permit and may not require a 401 Certification permit.

4) As stated in 3) above, page 12 states, "Water quality and sediment monitoring is required to ensure compliance with this requirement". Suggest replacing the word 'is' with 'may be'. Many of the Department's projects are scheduled for construction during the dry season (i.e. April 16th through October 14th). Some projects may only require 30-days, or less, for construction. If revegetation of disturbed soil areas is 100% successful and there is no active erosion occurring (as may be documented by photographs), then water quality monitoring should not be required. Again, the NR-EE suggests that some qualifying language be added to this sentence to account for the various nuances associated with project construction windows, revegetation, and for projects which may have an erosion control plan that has been reviewed by the CVRWQCB that conditions the terms under which water quality and sediment monitoring will be required.

5) On page 13, Compliance to demonstrate 'no net increase' of discharge of mercury-enriched soils allows for photodocumentation, surveying, or turbidity monitoring in the Lower Watershed. Is there some reason these same measures of compliance are not mentioned on page 12 for the Upper Watershed?

6) Will 'erosion control plans' also be required in the Lower Watershed as mentioned on page 12 for the Upper Watershed?

7) Note that on page 71, under Water Monitoring, the BPA for Mercury provides a list of recommended monitoring parameters. Here turbidity monitoring is not listed. NR-EE staff recommend that turbidity monitoring be included in the list of recommended parameters. Turbidity monitoring can be performed with relative ease in the field and provide real time data. Where data indicates that turbidity requirements are exceeded, immediate action can be implemented. This would provide an advantage in the field during construction with the implementation and adjustment of temporary construction BMPs, if necessary, and would allow data collection to demonstrate immediate compliance during storm events. Collection of storm water runoff samples for mercury and methylmercury analysis could then be used as additional confirmation of compliance.

Additional Comment:

8) Page 63, in the last paragraph, states: "These alternatives require that all of the major sources of mercury and methylmercury in Harley Gulch, which are the mines and the downstream wetlands, be actively remediated. Erosion in the East Branch of Harley Gulch related to Caltrans operations will also be controlled".

NR-EE recommends to strike the sentence with the reference to Caltrans. This sentence suggests that the 'operations' by the Department are a major source of mercury. A Site Investigation Report prepared by Shaw Environmental, Inc., for the Department investigated the mercury and methylmercury concentrations at this specific location.

In February 2003, six soil samples from the project site were analyzed for Total Mercury and Methylmercury using EPA Methods 1630 and 1631 for methylmercury (Report dated April 20, 2003, by Shaw Environmental, Inc., Task Order No. 01-412100-ZO, Contract No. 43A0078). Total mercury and methylmercury concentrations were reported in the six analyzed samples in two ways: "as received (AR)" and "dry weight basis (DB)". AR concentrations ranged from 0.0509 ppm to 0.146 ppm for total mercury for samples SR20-9 and SR20-2, respectively. AR concentrations ranged from 0.000066 ppm (SR20-7) to 0.000221 ppm (SR20-3) for methylmercury. DB concentrations ranged from 0.0571 ppm (SR20-9) to 0.178 ppm (SR20-2) for total mercury, and 0.000076 ppm (SR20-9) to 0.000852 ppm (SR20-1) for methylmercury. Note these concentrations are well below the proposed benchmark 'trigger' of 0.4 mg/kg, dry weight, fine grained soil.

The University of California (1996) performed a study of background concentrations of trace elements in California soils based on 50 benchmark soil found in the state. The study reported that total mercury concentrations in the state range from 0.1 to 0.9 mg/kg and that the **average** is between 0.20 to 0.26 mg/kg. Also, note the Public Remediation Goals published by the U.S. EPA for residential and industrial land uses are 6,1000 ppb to 62,000 ppb, respectively.

Ms. Janis Cooke
Central Valley RWQCB
June 9, 2005
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Basin Plan Amendment
Mercury-Cache Creek Watershed

Note under the Harley Gulch heading on page iii of the proposed BPA for Mercury the second sentence states: "Over **ninety percent** (of) the total mercury load in Harley Gulch is estimated to come from the mine-impacted West Branch" (emphasis added).

Clearly, the reference to Caltrans operations is inappropriate and should be removed from the BPA for Mercury. Erosion concerns within the Department's Right-of-Way, aside from any appreciable mercury load, are more appropriately addressed under the Department's Statewide NPDES Permit (Order No. 99-06-DWQ, NPDES No. CAS000003).

Thank you for the opportunity to provide comments on the BPA for Mercury. We look forward to working with staff to accomplish a successful implementation of the goals outlined in the BPA for Mercury.

If you have any comments, or specific questions with regard to the above, please contact me at your earliest possible convenience at (707) 445-5201.

Sincerely,

Original signed by

DAVID L. MELENDREZ, P.E.
Branch Chief
NR Office of Environmental Engineering – North